

ANTI-NEWTONIAN.

LOOMIS.









Eng^d by Augustus Fehn N.Y.

Wm Isaacs Loomis.

WM ISAACS LOOMIS, LL.D.,

The American Astronomer

THE ANTI-NEWTONIAN.

INCIDENTS AND FACTS

IN

MY LIFE.

BY

WILLIAM ISAACS LOOMIS,

Pastor of the Antioch Baptist Church, 264 Bleecker Street, New York.

New York:

THOMAS HOLMAN, PRINTER, CORNER OF CENTRE AND WHITE STREETS.

1869

58

Entered, according to Act of Congress, in the year 1869, by

WM. ISAACS LOOMIS,

In the Clerk's Office of the District Court of the United States, for the
Southern District of New York.

GOD THE SAVIOR IS MY GLORY.

IN the *Life of Flavius Josephus*, written by himself, he boasts of somewhat better blood in his veins than that of ordinary mortals, resting his claim on a lineage of illustrious relatives, and a motherhood in a line of priests and kings.

Being an ordinary mortal in the commonwealth of men, I rejoice in that the one blood of mankind flows through my veins. The beaming smile of my mother, which shone on my infant face, was a reflection of the smile of the Queen Mother of Eden, and in it could be read my pedigree—an offspring of God. Such a descent of birth and blood, made not less sacred on account of ignorance and sin, is glory; and animated by it, my brothers and peers of the race, in the use of their godlike powers, may rise to a distinction which their Creator will delight to honor.

After so long time from the creation of man, and while the philosophers are so abundantly satisfied with Newton's demonstrations of his *System of the World*, I announce to my countrymen and the world discoveries of facts of nature in the celestial science of astronomy which are anti-Newtonian. An appeal from Newton's *Principia* to the facts of nature constitutes the foundation of my arguments; and assuming that some may ask: Who is he? I have concluded to say a few words in reference to myself, course of life, and the way in which I was led to the conclusion that it was my duty to oppose

the philosophy of Sir Isaac Newton, and give to mankind the natural law of the motions of the heavenly bodies.

Births.

1. On a Christmas Day, 25th of December, old style, 1642, a child was born, an Englishman, at Woolsthorpe, in the parish of Colsterworth, in Lincolnshire, and named Isaac Newton. He became the father of a new philosophy. At his kingly nod erring astronomical savans of the past were unthroned, retired, and laid away in silence, to gather dust on their lips in a long repose. Under his all-grasping scrutiny, Nature appeared to be no longer willing to withhold the long-sought-for and knowledge-coveted cause of the motions of the heavenly bodies, but delivered it to the man she most signally delighted to honor.

2. On a Christmas Day, 25th of December, new style, 1810, a child was born, an American, in the city of New York, in Orchard Street, and named William Isaacs Loomis. This child of God and of nature was moved to investigate the works of his heavenly Father, and being, as he believes, divinely led in a new and true way, discovered the origin of gravitation, and the way in which the God of nature generated the motions of the celestial bodies.

Early Recollections.

The gloom of experienced wretched poverty hangs over the early days of my remembered being, and the pleasures of infancy made

charming by the ordinary comforts of life I never knew.

Once I nearly perished by fire. Then a watery grave yawned in vain to swallow me up. Afterward the dangers of a rocky precipice entangled my feet, and gave momentary threatening of dashing out my life. The hazards of the way culminated in the premature discharge of a musket, the deafening report of which assured me that there was less than one step between me and death. Thus I was made acquainted with the alternations of safety and danger, with the experience of being scantily and plentifully fed, that all these changes might be sanctified in the adorning of a blessed life. In the epoch of Immanuel's advent and humiliation, his divine sufferings and agonies gave a repletion of interest to the glory of his triumph; and, in the annals of eternity, what has been or can be so redounding to the praise of the Godhead as the life of the Lamb of God from Bethlehem to Calvary? What if Death did wed Christ on the cross, and Death and the Prince of Life became one? What if, by the unthrobbed heart of Jesus, hope lay weeping in dismay? The resurrection! Yes, the resurrection of our Redeemer assures us that all was not lost. Have ye not heard of that terrible moan of triumph when Death, in darkness, put his crown on the dead Christ, and the lips which had given life to the dead were closed in silence? All this ruin but preluded a reign of life eternal for the suffering children of earth, and to it the ragged and hungry, the sinful and suffering, may look through Christ for a release from every sorrow.

Education.

My first teacher was an elderly matron, whose wrinkled face wore an air of sad sobriety, unenlivened by a smile ; but she was full of teacherly goodness, and wolfish words, the twin brothers of profanity, never defiled her lips or heated her blood. Under her instructions the class of which I was a member advanced to a first reading lesson, which was the first chapter in the New Testament. The Hebrew names of the memorable worthies occurring in this first reading lesson were to us insuperable obstacles, which compelled every one of the class to change his base every minute during the lesson. My second teacher was a bear-man, whose hugs and slaps gave him a life-long place in the memories of those who were put under his care, and suffered the astonishment and surprise incidental to his unexpected thumps and punches. At this time our school books were a Spelling Book, a Bible, used as a reading book, and an Arithmetic. My first writing lessons were with a stick in sand. Atlas and Geography were to us unknown books. By a happy incident I got hold of a Grammar, opened to the verb "To love," and committed to memory the persons of the verb in the indicative mood. Not understanding what the persons of the verb, nor indicative mood, nor what love did or could have to do with Grammar, I cast the book aside as wholly useless, and that was my first and only lesson in grammar till I was over twenty-one years of age. Attached to our school was a gymnasium, under the personal and sole direction of our teacher, to the benefits of which the whole school was eligible, without a

money charge. The agility of the pupils was brought into the most lively being by a fishing-pole, fifteen feet long, a mahogany ruler, thirty inches long, and other beautiful appliances, such as a flat hand, a doubled-up fist, and booted foot, interchangeably used, never failed to enlarge our muscles, and give us a keen sense of lively times and an enlargement of our lungs. But what appeared to be an initiation into mathematical skill, though unknown to us at the time, was our gyrations, our master for the time being in his own person the centre of attraction. In these exercises the master would take us by the hair of the head, or by both ears, or by our coat collars, and then we could describe the trajectory of a comet in less time than by geometrical construction, and our whirling descriptions of areas of conic sections produced the deepest conviction of the accuracy of our demonstrations in the mind of our teacher; and when we encountered the centrifugal force of our master's boot, from the tip of it we flew off on a tangent, and the period of my first eight years was marked on the records of time.

The Second Eight Years.

About the beginning of this period I was employed by a very respectable hotel keeper, at whose bar liquor sold for six cents per glass, the measure of which was half a gill and no more, and his charge for board was four dollars per week in advance. These then first-class prices raised this hotel to great respectability, and secured for it a superior company of customers. In this hotel I experienced my first promotion in the

activities of public life, and was elevated to the dignity of scullion in the kitchen and sub-bar-tender. In this two-fold office the world opened before me for the first time with plenty to eat, and plentifully varied drinks. My dream of life was enlivened by the music of gobbling turkeys and cackling hens, while the sweet incense of hot rolls and smoking cups of coffee regaled my sense of smell. Now, indeed, had come to me a jubilee of uproarious joy, a millennium of good things without a night, for we were accustomed not to go to bed till morning, and my translation from penury and want to a bountiful larder and bar and money drawer of my new home was all I could desire, and more than my young visions of plenty had ever dreamed of. I now mingled with a class of men whose examples were in keeping with that terrible proverb : "Eat and drink to-day, for to-morrow we die ;" men whose darkened minds prevented their knowing and doing aught but evil, and among them I learned the following poetry :

"Friend of my soul, this goblet sip,
'Twill chase that pensive tear ;
'Tis not so sweet as woman's lip,
But, oh ! 'tis more sincere.
Like her delusive beam,
'Twill steal away the mind ;
But, truer than love's dream,
It leaves no sting behind."

As if it were not enough to rob woman of her sincerity, and crown her mistress of delusion, the men of our house took pains to teach me that womanly virtue was only a beautiful name, marketable at a given price, and sometimes as cheap and cheaper than a glass of brandy. This wild assault on the charity of heaven in the gift of

womanly virtue was but the outspoken effect of how deeply depraved were the men of such sentiments, and, if warrantable, lead me to inquire what kind of creatures had they in their chosen wives and mothers !

A Redeeming Feature.

One time, and only once, a minor came to our bar and called for strong drink. At this time the master of the house and his lackey were behind the bar, and one of the most beautifully formed of young men, with rosy cheeks, entered the bar-room. He was, as near as I could judge, about eighteen years of age, richly attired in broad-cloth, a diamond breast-pin glowing on his bosom, in his hand a gold-headed cane, and, standing before the bar in the stateliness of royalty, he called for a glass of brandy ! "Boys can not drink brandy at this bar ; you may have a glass of beer," was the reply of my master. The young man looked on us for one moment, his face covered with a tinge of red anger, then in silent contempt he turned from us and went his way, to be seen no more at that bar. But what would have been the measurement of his astonishment had he known that behind that bar stood a boy who, when the grass was growing on his master's grave nearly half a century afterward, would bring that beautiful youth into notice, and rehearse : "Boys can not drink brandy at this bar ; you may have a glass of beer."

A Change.

From the enjoyed scenes of a joyful life with men whose great aim was to drive all kinds of

care away, I was taken and put in the employ of a New York broker. The respectability of his family, the lady-like deportment of his daughters, the quaint nature of their mother, and the stern mandates of their father, opened to my view new scenes and contemplations. This part of my life, so unlike anything in my former experience, made me uneasy with its cold sobriety, and hate its moral bearing. Without one drop of anything to cheer me as I had been cheered with life among the jolly drinkers, living less bountiful and varied than when in my hotel home, tended to make a moral life a burden to be avoided, and the hope of being myself again as I had been was not to be indulged. When among the sons of Bacchus I ranked in dignity with them; and now to be compelled to acknowledge myself inferior to those I served, and wear the yoke of their restraints, was too much for my endurance. Invoking the third change in my life it came, and I was advanced to the office of sub-clerk in a grocery store on Long Island, where the best of liquors sold for three cents per glass with a cigar thrown in, and the cigars when retailed sold three for one cent.

The Young Lover.

The most remarkable event of this period of my life (about my twelfth year) was my falling in love with a rich young lady whose years were about a third more than mine. What made me love her so I do not know; but this I know, I loved her. Now that first grammar lesson, of which I have informed you, stood before me in the verb "To love;" in a captivating force that bowed me abso-

lutely to the service of a new-born passion, and now understanding the verb and also what love had to do with grammar, I wished to conjugate it until unwearied death would tear asunder the conjugal bond. I had seen many a rose-bud of lovely beauty like her blooming as the flowers of Paradise along the pathway of life, and because they bore the divine image they were more exalted in the scale of being than the angel Gabriel. He in his principedom is nothing but a servant; but they were queens of heaven, born to be the daughters of Immanuel, to inherit eternity, and sing the anthem of his holiness in heaven. All these left me as unimpassioned as the rose of summer jeweled with a dew-drop of the morning, its leaves gathering strength and beauty as it drinks the rays of the rising sun. Then, for the first time in my life, I experienced a passion of loving-kindness, pure as the sacrificial flames of holy priests at God's altars, and sinless and unselfish as a mother's love. Had I been a Peri, I then felt prepared to repass the beautiful gates of Eden, and Cherubim with flaming sword, instead of smiting a sinner, would prepare the way to welcome a lover; but, alas, the earth earthy clogged my way, and not knowing what else to do, I never told her of my adoration of the beautiful, but embalmed her in the young lover's dream.

In this grocery my knowledge increased, and it was not long before I was able to take four drams a day without a scruple. Here I became a companion of men who claimed to be the truly Scripture temperance men, who never scrupled to take a dram, and always for their stomach's sake. What to the uninitiated might appear droll, this

society of men would commend the sanctity of their lives to the diligent observance of church members, men who claimed to be pure-minded and religious. Of this company who frequented our store, some of them had graduated from State prisons, and others were from the respectable to the lowest walks of life ; but the use of the three cent rum sling slung all distinction to the four winds, blending us in the closest brotherly union. When the most perfect of our customers were congregated in the store by night, as they often met, under the operation of the spirits they became surprisingly learned and eloquent, and in these times the law and religious commentaries of lawyers and divines were transcended in legal lore and sacred criticism, and were consigned to an age of darkness. This company of immortals praised their principles of unwavering virtue and priceless honor, from which they could not be persuaded to part, except the telling of a lie would do more good than the truth. Such a sacrifice might be endured, if it did not degenerate into a habit. These patrons of the rare graces also concluded that it was wrong to take strong drink only when you wanted it. Never to fight and quarrel, only in manly self-defense ; never to curse and swear, only when it became necessary to exhibit a proper resentment in righteous indignation.

One more plunge in the ways of evil and change of employment, and the scene opens in a gambling-house, in which I was installed game-keeper and general runner. Occasionally it came to my mind : There is something better to be enjoyed than I am in quest of. But what could I do or know in my surroundings? No men of God were to be found in

the paths I pursued, and darkness, deep and awful, buried me in its gloom. Paganism had its false gods and altars of devotion, and times for worship, but among the class I had moved in for years not even the name of a false deity was known, but to be profanely used in cursing, and the cultivation of godless sensibility absolved from all future dread of woe. In my new vocation I at first experienced delight in new scenes, surrounded by well-dressed men. Often seeing splendid jewelry and the possessors of large sums of money, I hoped for bright days to dawn in showers of gold, and the reveling joys of a gambler's life ; was growing to be a lover of pleasure and hater of God ; but despite the absence from the good, the resulting destiny of a life wasted in sin would haunt me like a ghost of evil. At one time I was as godless in my thoughts as though atheism had succeeded in obliterating from the facts of nature the evidence of the existence of the Creator ; and then would rush in upon my soul so deep a sense of guilt, that the miseries of the lost seemed to be my impending lot. I had known of the dying unpardoned gambler in the grasp of the *mania a potu*, suffering in his delirium the anticipated horrors of damnation, and trembling with the thought that my chosen path led to that same result, and fearing lest I at last should find a place and burial in that hell that my companions had so often thundered in my hearing, I forsook the game-keeper's life, and determined to be something. I knew not what, or when, or how.

Improvement.

In the seventeenth year of my life I was indentured to Mr. Michael V. Cregier, of the city of

New York, to learn the art and mystery of piano-forte making. Under his care and instructions the barbarian boy was inducted in ways of morality, and advanced in well-being and mechanical skill. My will being in almost complete submission to my master and his wife, I tendered to them the most perfect obedience, and the yoke of their restraints I suffered with patience and to much profit in after-life. Not one of my former employers but had suffered some through my pilfering, though not enough to balance my claim on them for unrequited labor ; but during my apprenticeship I did not steal to the value of a cent. So determined was I to lead a different life, and so complete my conquest over some of my former sins, that honesty and obedience became pleasant and desirable duties, which I rendered to every one entitled to my service.

Marriage.

On the fourth of July, 1776, our republican fathers, of blessed memory, called the world to a new cause of joy, by their declaration of freedom, and then began a nation, whose course was destined to gather under its shield a greater number of happy families than had ever before found pleasant homes in freedom's bower. On the anniversary of that great day, July 4, 1828, feeling a desire for the enlargement of my freedom, and the joy in hope of making one of the happy families of the land, I asked an orphan girl of the name of Hannah Marshall to take a walk with me and enjoy the pleasures of the day. During that walk our hearts became so entangled as never to be separated, and, on the 23d of February, 1829, Mr. and Mrs. Wm.

Isaacs Loomis began to be among the actualities of married life. I had heard of the charms of solitude, and a sigh for a lodge in some vast wilderness; but the solitude of being alone, with your sweetheart with you, and the lodge in the wilderness of conjugal felicity, was more than poetry to me, and nearer paradise than ever before. The fruit of this marriage had been coveted by kings, who had counted children a more glorious portion than crowns and dominions, whose hopes, however royal, were vain; but our lot was to see eight kindlings of God's immortality clothed in the vestments of our flesh, reclining on their mother's bosom for the nourishment of life. Six of our children were brought up at our table, surrounded with the enjoyments of a pleasant home, and were trained to read the Bible in course as a part of our daily family devotion. Our first child (deceased) and fifth child (deceased) and eighth child were daughters. Gather the rose-buds of infant beauty, and transplant the gems of immortality to the Savior's crown, was the decree of the Almighty, and our first and fifth child fell from their mother's bosom into the Redeemer's arms. Our fourth child, when he had attained the years of a man, had his hopes in this temporal life destroyed by the angel of death. But there is a record called the Lamb's Book of Life, in which, if a name be written, it is the name of an heir of the blessings of eternity, whose well-being is identical with the well-being of the Savior. This son having asked for and by faith obtained a name and place in that Book, by confessing Christ before men, and having been baptized into his name, what can await him but "Come, ye blessed of my Father," when Jesus

shall come the second time without sin unto salvation?

Conversion.

My wife was naturally opposed to frivolousness; and belief in the good truth of God, as set forth in the divine Scriptures, was all-commanding, and she earnestly desired to be made a follower of the Lamb; but I was indifferent to that holy estate, while I did not care for Jesus, led me recklessly in the way that leads at last to the lament of the loss of heaven. At her request I was induced to attend a meeting. In giving my consent, I thought only of the novelty of the occasion, and went solely for the fun of seeing the antics of the simpletons, and to laugh at their foolishness. Esteeming the ideas of sport and frolic supreme, there was not a place on the earth, not excepting God's sanctuaries, too sacred for its enjoyment, and in this way possessed I found myself surrounded with the solemnity of a company of men and women, whose blood-bought souls worshiped God with power. When the final amen of that meeting, its services, and God's work in it, had passed into history, my Creator heard me confessing my sins, and saw me feeling the need of Jesus. A change for good and God-ward had come, the light appeared, and henceforth the bond-slave of sin resolved to battle for life, liberty, and eternal happiness. Nearly four months afterward, a morning bright, resplendent with the heavenly light of the Sun of righteousness, broke in upon the darkness of my mind. My soul, receiving the spirit of a freeman in Christ, was quickened into spiritual joy, and from that hour to this Jesus Christ has been the repository of my heart and hopes.

Call to the Ministry.

Not long after the beginning of my acquaintance with Jesus Christ, and companionship with the Lord's people, I was moved by the Holy Spirit, who had brooded over me and made me a child of heaven, to preach the gospel. The idea of God calling such a poor unlearned creature as I was appeared as practicable as his calling the born dumb to sing his praises, both of which are within the possibilities of divine power; but that he could use me in the illustrious work of winning souls by preaching was with me a great question. I had read and learned so little of anything that was good and true, had been so lately brought into the light and knowledge of salvation, that if I preach the gospel with the Holy Spirit sent down from heaven God must create a new way in this desert of my mind, and lead me in a wilderness in which I had no capacity to walk. While I was deliberating in wonder, the passage, "All things are possible to him that believeth," inspired me with strength and hope. I soon began to experience that a heart given to the dear Savior, warmed by his love, and moved by it with love for sinners, was one of the means to build up the glory of Christ among men, that the excellency of the power should be by the Spirit of God, and not in the excellency of words which man's wisdom teaches. Being anxiously desirous to set forth the glad and heaven-ennobling tidings of salvation in the most tender and effectual manner, I resolved to educate myself to a degree that might glorify my Creator, and cause some of my race to hear the word of God in its munificent gifts of promise to the sinful on their believing. Auxiliary

to this great aim of my life, I purchased a Bible, Buck's *Theological Dictionary*, and Dr. A. Clark's *Commentary on the New Testament*. The no-book course of so much of my former life had induced in me a perfect dislike of books, and the incident weariness of study was slavery indeed. My capacity for compositions was limited in my new field of thought to but few words, then followed a hard, tedious time of thinking with the gain of a few words more. Encompassed with these difficulties, I laboriously pursued my way to the prize before me, over a more than corduroy road of ups and downs, rising at four in the morning to study the word of God by lamplight. To enlarge my means of giving to the heirs of glory gems of thought that would tend to make them wish they were shouting with the harpists of heaven, I acquired some knowledge of the English, Hebrew, Greek, Latin, French, German, and Spanish languages; and each one of said languages has contributed to increase the powers of my mind and the emotions of my soul.

Torturing Trial and Triumph.

In deference to human authority, which is supported by the best of reasons, I applied for license to preach; and my first rebut was: "What a fool you are! Your forehead is so low that thoughts have no room to jump up and down in your brains." I was, however, admitted to the dangers of trial sermons, and the next stinger was: "William, there is no use of your trying to acquire the art of preaching, your articulation is so bad, you chew your words to such a degree that it is difficult to understand you." One more lunge, right through

my heart, and the agony was over. My friend and companion, an old and holy man, whose gentleness of manners made him appear lovely, had recommended me for license to preach, and on our way home from one of the appointments of my course, opened his mouth and said: "William, I am sorry that I have had anything to do in commending you for the office of a preacher, you are mentally incompetent to comprehend the truth of the gospel, so as to communicate it to the edification of men; you will be ever learning, and never able to come to the knowledge of the truth." This was to me agony indeed, because in my meditations I had prophetically foreseen success crowning my efforts, and kings and priests of God and the Lamb sitting at my feet in transports of delight, hearing my announcement of the heaven-derived truth as it is in Jesus. Then looking on my congregation, I saw their penitent tears, and heard their cry for pardon, hope, and heaven, and then to be told by the man whom I esteemed to be my best earthly man-friend, "You are mentally incompetent to become a minister," was like a chalice of poisoned hemlock to my hopes. Oh, how it did wring my heart, and ring in my ears, and hung the black pall of desolation on my fondest, holiest aspirations! I had been a vagabond in sin, and had seen men of wickedness make a chowder of virtue and honor, and devour it as if the feast had been one of purity; and those guilty revelers in evil had never questioned my mental ability and eligibility to be one of their chosen number for a life-course of sinful pleasure. I had passed from death unto life, and going up the hill of hope, a voice from the celestial world urged me with, "Go

preach the gospel ;" and in the surroundings of those deeply solemn circumstances, my heart given up to the work, to be told : " You can never make a minister of Christ," was sounding the loss of the crown of my hope. One more opportunity was granted me to try my gift, which was to be the last before my case would be called up by those who had it in their power to bind on earth what God had bound in heaven, or, through their ignorance, throw to the winds my application for their indorsement of the divine decree.

It was in 1832, in the city of New York, the cholera was raging, and sorrowful sadness in its carnival of gloom sat throned on every face. On our way to the meeting-house, I said to my friend who accompanied me in my preaching trials : " You will take the lead in the service, and I will follow you." He replied : " No ; because you know, William, that it is uncertain whether you preach five minutes or twenty. Therefore you will take the lead, and if you break down I will come to your support." We reached the meeting-house, and our eager eyes were filled with the sight of a crowd. Many of the hearers were clad in robes of deep mourning, and all felt that the wing of the angel of death overshadowed us. I rose to speak to a company of men and women, whose tearful eyes and grief-stricken faces seemed to speak to me, and say : Young man, if you have any words of consolation, say on ; for God's sake, give us words of comfort. Eyes of the creatures made in the divine image never before so glanced on me. And by one of those extraordinary manifestations in which it was shown that the excellency of the power was of God and not of man, the whole assembly was bathed in tears. For nearly

two hours, I charmed that congregation in a heavenly place ; then during that service I did hear the kings and priests of God and the Lamb shouting hallelujah ; I did see sinners in tears, imploring the God and Savior of us to have mercy on them, and give them hope and home in heaven. We were on our way home once more, and my friend said : " William, I will give up my former opinion of you. Your words are understood by your hearers, your brains are big enough ; you do understand the truth, and can communicate it understandingly, and all my fondest hopes would be gratified if I could change prospects with you."

In process of time I was examined by a regularly constituted council of Baptist ministers ; passed a creditable examination ; was counted worthy to take rank with the ministers of Jesus, and Rev. Duncan Dunbar, pastor of the Macdougall Street Baptist Church, preached the ordination sermon. I projected a course of studies, embracing that of medical science, intending, if the opportunity ever came to hand, to use it in procuring a degree of M. D. I studied a plurality of authors on anatomy and physiology ; numerous authors on diseases of the lungs, stomach, and bowels ; and on some of the diseases which render so many of human kind invalids through life. I read treatises on their cause and treatment by Allopaths, Homœopaths, Hydropaths, and Eclectics, and the knowledge derived was of the most essential benefit to me.

So far in my ministry, I have whirled through many changes and been pastor of fifteen churches. In one revival fifty-eight converts came to Jesus, and in another fifty-two. In one period of three years one hundred souls were introduced to the

knowledge of Jesus, and I baptized them ; and but for the opposition of other parties, I have reason to believe that the above numbers would have been three times as large. In another revival we lost more than we gained ; that is, because we were the poorest, least honorable, the greater number of our converts joined a richer and more popular church, leaving us to lament the loss of those who, in joining where they did, were lost to all usefulness among the multitude they joined. In the year 1840 I began a translation of the New Testament from the original Greek. In the progress of my work I became understandingly convinced that the translators of King James's version, which has come to be the generally accepted English Bible, had rendered some of the passages of holy writ in such simplicity, power, and beauty, as to forbid even the hope of a greater degree of perfection. Being in communion with the original Scriptures, it gave to me a power and insight to justify a comparison with it and certain translations ; and using the attainments, it was made to appear that some of the passages which had been rendered by the king's translators were put to shame when placed in comparison with corresponding passages in the Rhemish (Roman Catholic) Testament and Douay Bible. Advancing, I was electrified with divine delight, in learning new beauties of the inspired Greek, which the king's translators had not introduced into their version, the knowledge of which could only tend to make the people of God love their God and Savior and their Bible more intelligently. A CORRECT TRANSLATION WOULD HAVE DISCLOSED THE KNOWLEDGE OF

The Orbit of the Earth.

The translators of the commonly received English Bible, otherwise known as King James's version, finished and gave to their nation their copy of the English Scriptures A. D. 1611. The reader may learn from the chronology and fact, that if, the Hebrew writers of the Jewish Scriptures had, by virtue of the divine inspiration by which they were guided, made any allusion to any one of the heavenly bodies moving in or having an orbit, the above translators, if of the school of Ptolemy, their error perverting their understanding, could not understand what was meant, and consequently would render their text accordingly, and the fact of nature, a planetary orbit, would not be brought to light. This, I claim, was the case, and that the prophet Isaiah was the first man to intimate the fact of the ORBIT of the earth. I further aver, that when we shall be favored with a translation that shall as nearly as possible equal the divinely inspired originals, it will be seen that the God of nature, and the God of the Bible, the One I AM, in respect to the truly natural sciences, inspired to a certain degree the prophets and apostles in their allusions to the facts of nature, and that they opened the way to the knowledge of the truth of nature as well as they did to the knowledge of theological truth.

History.

The prophet Isaiah flourished about eight hundred years before Christ. He taught in Hebrew a fact of nature, and brought to the knowledge of his countrymen the orbit of the earth. Pythago-

ras flourished about six hundred years before Christ. He taught his countrymen and others that the earth has an orbit; but the teaching was denounced as false, and its discloser was counted by his countrymen a fool or madman. After this, for about twenty centuries, the dogma of a fixed earth generally prevailed, and the most intelligent of men gave the untruth of astronomy as hearty a welcome as ever has been accorded to the Copernican-Newtonian Astronomy. About the year of our Lord 1500, Copernicus, an ecclesiastic of the Roman Catholic Church, and also a mathematician, announced his discovery of the orbital motions of the planets, and in 1543 he informed Pope Paulus III. that he had kept his book, which contained an exposition of planetary motions, by him for four times the nine years recommended by Horace.

In 1666 the discovery of universal gravitation was made by Isaac Newton. For the want of this or some other force it was not possible to give a geometrical demonstration of the motion of the earth in an orbital path, nor the law of its motion. Seventeen years after this, or in 1683, Newton sent to the Royal Society, in London, his laws on the orbital motions of the primary planets. In 1684 Newton assured Halley that the orbital motions of the primary planets were demonstrated most perfectly. Never before, in the history of the world, had such a result been reached, and never before had men's eyes been opened to see so nearly the truth. From the forementioned dates it follows, that, while the translators of our common English Bible had opportunities to know of the Roman Catholic Copernicus' announcement that the earth moved in an orbit round the sun, they

were too early, by more than seventy-three years, to avail themselves of any of Newton's revelations of science to help them in understanding those parts of the inspired word of God which refer to the celestial science of astronomy. Hence, when the translators came to the Hebrew text, Isaiah xl., 23, which was destined to give to mankind the intimation of the existence of the orbit of the earth, they were at a loss what to do. None of them are known to have been believers in the Copernican theory; they were, if anything in this science, followers of the Ptolemaic system, and it is incontrovertibly certain that they had never heard of nor seen a geometrical demonstration of the earth moving in an orbit; they were all in their graves before Newton gave it to the world.

ISAIAH xl., VERSE 23.

"It is he that sitteth upon the circle of the earth."

The above passage is emphatically astronomical, and should have been rendered, "It is he that sitteth upon the orbit of the earth;" and thus justly rendered leads to the result that Isaiah was a prophet of God, and grand primate of nature, in teaching the fact of the existence of the orbit of the earth. Now, suppose the translators of King James's version had, unwittingly or otherwise, instead of giving the text as they have, rendered it: "It is he that sitteth upon the ORBIT of the earth;" what an eye-opener it would have been to the learned of that day; and what a help for Newton to have referred to the translation and to this Hebrew text of Isaiah to confirm his demonstration, that the earth, according to God's inspired book,

moves in an orbit. However obscure such a rendering might have been to the men of 1611, the men under Newton in 1684, the true men and the good men would have seen it shining in a glorious array of brightness, and, clasping the Bible afresh to their hearts, would have thanked God that its light disclosed a fact of nature two thousand four hundred and eighty-four years before Newton demonstrated it to the satisfaction of men. It is admitted that the translation as contended for would have been very mysterious to the men of 1611, and also unintelligible to the world of English readers; but what of that, could it have been more so than was the saying of Job, that "God suspends the earth in the open space?"

The Marvelous.

The God of the Bible is the author of the creation, and hence because he inspires in religion, leaving us not to the cogitations of our own ignorance, but specially illuminates us to do his will, I incline to the opinion, and think it reasonable, that he may make a philosopher in the same way that he does a Christian, by special illumination, inspiring and revealing to such the knowledge of natural astronomy. The cautious, while assenting to the possibility of such a revelation, would most likely question its existence; but God did make mechanics by special inspiration and revelation, and pollylinguists on the day of Pentecost, and the probability of his making an apostle of nature is within the limits of a just expectation. In the book of Exodus, chap. xxi., you may read that Bezaleel and others, by special inspiration and

revelation, were made lapidaries, workers in wood and gold, and all kinds of mechanical craft, in order to be able to construct the tabernacle, ark of the testimony, and mercy-seat ; without doubt, if I give the celestial credentials of my call, I may indulge the hope that there are living men who will be benefited by my revelations of the way of the Lord in nature.

About the time of the autumnal equinox, in the year 1846, being at that time pastor of the South Adams Baptist Church, in the State of Massachusetts, and occupying a dwelling-house, now owned by Hon. Daniel Upton, I sat alone in the dining-room of our dwelling in the midst of the evening, meditating in reference to what next I should undertake to advance me in the ways of truth. My loneliness and the quiet of near nine P. M. in a country place was favorable to my longing to know more. My state of mind was much intensified by there coming upon me an exceeding thirst for another deeper drink of the waters of the true philosophy which so ennobles the human mind, and opens the ways of God to the perception and understanding of his children. Under the excitement of that thirst I mentally inquired : "In what direction shall I go in pursuit of an increase of more knowledge?" And a voice answered : "Go **STUDY ASTRONOMY !**" The singularity of this way in calling me to a study so entirely new to me was very exciting ; and being awed into inclination to obey, and the belief that something good would come of it to my race, without conferring with any one, I resolved to follow the path in which I had been so mysteriously called to labor in, and a life-long work had begun. The next day I went into

the village of South Adams, to the cabinet workshop of Deacon Elisha Ingraham, and was aided by him in constructing a model with four arms, each one of them two feet long, two inches wide, of board thickness, and at right angles to each other. Within an inch of the outside ends of these arms I inserted wires, six inches long, to support balls which I cut from the posts of an old bedstead; mounted them on the wires, to represent in one view the places of the earth at the beginning of the four astronomical seasons of the year, and placed a candle in the centre of the model to represent the sun. In this manner prepared, I anxiously waited for the shadows of evening and that great first philosophical night of my existence. It came; and the darkness falling so gently on the clear atmosphere permitted the stars to shine in the pomp of their twinkling glory, and, also, in the centre of my model, in the plane of the centres of the four balls the centre of the light of a tiny candle was graduated, so that the flame of the candle might shine as nearly as possible on a hemisphere of each one of the balls. However insignificant my model to represent the earth and its motions, and the tiny candle to represent the sun, by their agency I was about to enter into a vision of the creation, the amplitude of which is as immeasurable as the eternity of our heavenly Father, and its grandeur the imprint of his being and power.

My First Experiment.

I looked for the north star, which was sufficiently near the north pole of the heavens to answer the purpose, bent the wires of the model, so that

their upper ends pointed to the star, the wires coinciding with the line of direction, and by this means I was enabled approximately to mount the balls of the model on axes, having inclinations corresponding with the inclination of the axis of the earth, and from the representation I learned how much the axis of the earth is inclined from a perpendicular line, and how the prolongation of the earth's axis, north and south to the stars, constitutes the axis of the heavens, around which the whole starry heavens appear to move in the time of a revolution of the earth on its axis.

Second Experiment.

I began to revolve one of the balls (call it a globe), representing the earth, around the candle representing the sun, being very careful to keep the north pole of the globe pointing to the north star during the entire revolution of 360° , and the knowledge of the parallelism of the earth's axis dawned on my eyes and mind.

Third Experiment.

I then placed the ball, its north pole pointing to the north star, so that a line joining the centres of the flame of the candle and the ball would be perpendicular to the axis of the ball, and now the light of the candle shone on one half of the ball from one to the other of its poles, like the sun shines at the time of the equinoxes on the earth. This opened the way to see the truth of nature, and in imagination I enlarged the candle to a sun, the ball to the earth, and placed myself in the open space, and by the eye of my mind I saw the

sun shining on the day of the autumnal equinox sidewise on the earth, illuminating one of its hemispheres from pole to pole, excepting refraction, while the other hemisphere of the earth was in darkness. This was as clearly demonstrated to my mind as if I had with my eyes of flesh beheld it. What moments of impassioned rapture I then enjoyed! The glory of the facts of nature shone on my path where all had been dark before.

Fourth Experiment.

I then placed the four balls in position on my model, their north poles pointing to the north star, and the distances of the centres of the globes from each other were 90° . I then took a position facing the north star, and placed my model before me as above described, and in one view I saw how the earth was placed in the beginning of each one of the seasons of our year. Right before me one of the balls, with its north pole illuminated, and its south pole in the dark, showed me how the north pole of the earth, on the 21st of June, is illuminated, and its south pole in the dark. I then looked to the next ball on my model, and like as the candle shone on one of its sides, and both its north and south poles were illuminated, so in nature, on the day of the autumnal equinox, in like manner the sun shines on the side of the earth from pole to pole. I then looked in the order of the circle to the third ball, the candle shining on its south pole, but its north pole was in the dark, and this showed me how and why the earth, on the 23d of December, presents its south pole to the rays of the sun, and its north pole is in the dark.

Fifth Experiment.

I then moved one of the balls on its axis in connection with the orbital motion round the candle, which produced a miniature representation of the grand work of nature ; and as the light of the candle at every instant changed places on the ball at the point or line where light and darkness met, so does the line where sunlight and darkness meet on the earth change every instant. I was, in this experiment, enabled to see why the point of the sun's rising and setting are variable, and what proportions of the earth, and also its parts, are illuminated from day to day throughout the year, and why the light of the sun for one instant twice in the year shines from pole to pole, and how to determine the vernal and autumnal equinoctial points. Continuing my observations, I transferred the motions of the ball of my model or representative earth to the sphere of the stars, and lo, I discovered that the daily accelerations of the stars was not due to the orbital motion of the earth, and that fact of nature led to the result that the sidereal revolutions of the planets, as avowed by Kepler, and demonstrated by Newton, are not to be found among the facts of nature. On that memorable night, as its midnight moment flitted by, I was in possession of the key of nature, which, if properly and understandingly used, would open the temple of God's universe, and disclose to man a better knowledge of its God-built chambers in a new system of the world. I felt as if the phantom of a new order of the starry world was calling me to put on its garments of order, and place it in its beautiful array before the men of my race, assuring

me that I had discovered the elixir of intelligence. The way of toil lay open before me, and the success within my reach.

I had resolved, on an early and considerate deliberation, never to write a book. At this period I scorned even the idea of imitating anything that had been done in the way of book-making, and then claiming to be its author. Originality alone made me abandon my anti-book purpose. This originality of conception involved and set forth in my book,—the thought of being the first man of the human race to explain the cause of the celestial motions,—the first gospel minister to say to the Church of the Lord of all worlds: "Behold the order of your God and Savior!"—the first American to say to his countrymen: "Rally round the flag, boys, and march in the van of science, leading the nationalities of the earth, and stand sentry over these discoveries,"—so animated me, that the book was written.

My book is commended to the reader. The great features of it are contrary to the teachings of Sir Isaac Newton; and a comparison of the facts of nature with the doctrines of the *Principia* is the wedding supper of intelligence, to which I particularly invite my countrymen, and then hope to marry them to the facts of nature. The following particulars constitute the value of my book:

1. Discovery of the origin of gravitation.
2. That gravitation is not universal.
3. That the force which moves the planets round the sun is not centripetal force.
4. That the force which carries the heavenly bodies round the sun was originally projectile motive force.

5. The reason why the planets move eastward round the sun is given.

6. The laws of motion, which were employed by Newton, in his resolution of his system of the world, are demonstrated to have been without existence.

7. A new theory of the motions of globes ; in which it is proved, from the entire passivity of matter, that the doctrine of the equality of the angle of the incident and reflected motions of globes may or may not be equal, according to the manner of the impress of the force. The revolutionary nature of this part of my book is worthy of the attention of every lover of truth.

8. I have not only shown the cause of the earth's motions, but have brought to light the cause of the rotation of the earth on its axis, which fact has never been accounted for in a reasonable way by the Copernican-Newtonian astronomers ; nor is it possible for any astronomer of the present accepted system to do so.

9. I have demonstrated the orbital and axial motion of the earth by an original argument, the most perfect and convincing, independent of all the arguments and demonstrations hitherto relied on.

The Glorious Indeed.

From the time of the introduction of man to the contemplation of the beautiful and majestic in nature, on to the time of three years before the birth of the illustrious Newton, not a transit of Venus had been witnessed by any of the earth-born race of men. What is further remarkable,

the tables which mathematically predicted the times of the transits were in error. Astronomers, in their blindness, had forced figures, and forced geometry to testify to their misunderstanding, and all of these were proved to be wrong. About three years before the birth of Newton, an English boy, by the name of Jeremy Horrox, possessed by a deep-seated love of the sublime in knowledge, detected the errors of his astronomical fathers, constructed new tables, from them predicted the time of a transit of Venus, and at the expected moment Horrox sees Venus transiting the sun's disk. I have thought that there have been moments of thrilling interest, when a great event was of sufficient interest to excite heaven and fill its inhabitants with rapture. Was not this one of the events so glorious and worthy as to command the rapture of every servant of the Lord in heaven and on the earth? It was, indeed, a moment of glory as God looked on his child—this infant of a moment observing the first historical transit of Venus. He would not, he could not, and did not, withhold his notice and smile at the instant his godlike child marked the beginning of the epoch of the observed transits of Venus. A comet, at the time nameless, was seen in its wonderful, awe-inspiring, and celestial majesty flying through the expanse, and laying under tribute the admiration and fears of all observers. Of those who observed this comet, the most prominent was an Englishman of the name of Halley, and he predicted the time of its next appearance, which would be, in the course of events, some time after his death. In respect to which he said: "My countrymen, I shall be numbered with the dead when this comet

appears again ; and when the eyes of the world greet its reappearing, tell them an Englishman predicted its advent!" Fame has its reward, and now that comet bears the name of Halley's Comet, and at least one of the celestial visitants has become, by the discovery of its reappearing, annexed to the mental empire of Great Britain. Call to mind the unwearied Kepler, toiling on during a score of years to reach the goal of his hopes. His anxious cares had culminated in what he believed to be a transcript of nature's wonderful, mysterious facts. He had gained the happy, proud eminence in which nature owned him as her teacher, and henceforth his dictum will be law for all the nations of the earth, and also for all ages. He had examined the archives of nature, deciphered her hieroglyphics, and prepared them to be translated into a hundred tongues, so that all might read and hear of the wonderful works of God. The pen d-r-o-p-s from his fingers. The (his) book is written. He reposes for a moment in the silence of devotional awe ; mentally surveys his field of work. On wings of light he flies round the orbits of the planets, beholding their order and their distances and motions, and then gives utterance to : "The book is written ! I will give way to my sacred joy. If I find a reader now it is well. If not, if I find a reader one hundred years hence, it will be well. I can afford to wait a hundred years for a reader, since God has waited six thousand years for an observer."

I now appeal to you, men and women of our nation, to reward my claims with your attention. Belonging, as I do, to you by birth ; devoted to your holiest and best interests for time and for-

ever, it becomes me to place the new views of nature before you in such a way as to secure your assent by the force of truth. Then you can understandingly admire the way of the Lord in nature, and your convictions of the truth will rest on the firm base of nature's facts.

My Philosophical Argument.

IN observations of the celestial motions I learned, that the centre of the apparent yearly sun could not transit the same star at the beginning and close of the astronomers' sidereal year of the sun, the apparent diurnal revolutions of the stars precluding the possibility of such a result. Hence the times of the sidereal years of the planets as given by Kepler must be false also, for he founded them on the assumption that the stars have neither real nor apparent motions, and the assumption being untrue, Kepler's conclusion is of a like nature.

The laws of motion which the philosophers had adopted as sufficient to account for the motions of globes in any direction being inseparably connected with the Newtonian force of universal gravitation, (which force not existing) I found to be incompetent for the uses of nature, and I supplied the want by my discovery: That a single projectile side-wise impulse impinging on a globe would as surely urge the globe in the direction of a curve line, as would the same force if directed in a line through the centre of the globe urge it in the direction of a right line.

The matter of the Universe was originally passive, being naturally without power to move itself.

This passivity excluded the possibility of there residing originally in matter such a force as Newton's assumed force of universal gravitation. The force of gravity by which the matter of any revolving sphere tends to its axial centre originated in the rotary motion of the sphere, and hence the force of the gravity of the matter of a heavenly body is equal to its weight ; and the measure of that weight always determined by the rate of the axial rotation of the spheroid.

According to Newton, the mutual attractions of the gravities of a bale of cotton weighing 400 lbs., and the weight of the whole earth, are in proportion to their respective masses.

If this was or is so, a force a little superior to the whole force of the attraction of the whole earth would be required to lift the bale of cotton away from the earth's surface. This is so contrary to experience and observations of all bodies with which we are acquainted by handling, that we have the right to conclude that the Newtonian theory of mutual attractions of all bodies is without the pale of truth, save when two lovers are mutually attracted to each other, and then it is not in proportion to the respective weights of their bodies, but the intensities of their affection.

It is worthy of notice, that La Place, Newton, and their disciples, say nothing about the gravity of matter arising from its absolute weight before it was started into motion, but speak only of the gravity or relative weight of it while subject to the force of axial rotation. The density of matter is never altered by motion, but its mass or weight may be. On this account we shall be able to prove that matter may be divested of its entire weight,

and consequently of its entire force of the gravity of its mass.

Let us assume the density and the absolute weight of the matter of the sun and planets to have been equal to each other before they were set in motion, and then learn what the force of gravity is, how originated, and how the weight of matter may undergo changes, its density all the time being without change.

When the matter of the earth began to turn on its axis, it encountered the centrifugal force arising from the axial rotation, which reduced the absolute weight of the matter of the whole earth below the measure of its density. The change which took place consequent upon the resistance of the centrifugal force arising from the axial rotation, determined the present weight of the matter of the earth, and also its gravitating force; and because of this change, what can be more evident than that the present relative weight and gravity of the whole earth did not originally inhere in its matter, but were caused by the force of rotary motion? Hence the conclusion is fairly reached, that the present gravitating force of the earth did not exist coeval with the existence of matter, nor before the beginning of the earth's rotary motion.

A decrease of the rotary motion of the earth would tend to increase the gravity of its mass, but an increase of the rotary motion would tend to decrease the amount of its gravity. These variations of axial rotations show how matter may be impressed with any measure of gravity, be passed through every possible change of weight to 0, and the density of the matter all the time remaining intact.

Suppose three globes, D, E, F, of pure silver, of equal diameters, at equal distances from the sun ; the axial motion of D twice as much as E, and F half as much as E. The matter of these globes, opposed by their varying centrifugal forces, will vary in the nature of the cases, for the weight and gravity of F will be greatest, E less, and D least, but their densities will be unchanged ; and a portion of silver that would weigh exactly 16 ounces on globe E, will weigh more on globe F, and less on globe D.

Let us now advance to learn how the particles of a globe may be without attraction for each other, and the matter of the globe be without weight.

Suppose a globe of gold moving in free space, the velocity of its rotary motion tending to equilibrium. In such a state, the particles of the globe will press neither way among themselves, being nicely balanced by the centrifugal force of the rotary motion, and the whole globe will be without weight, or, which is the same, destitute of gravity.

Newton assumed that all matter is pervaded by a force of gravity which is distinguished from its weight.

If such a force was coeval with the origin of matter, like its density was, what can be plainer than that Newton did not even mention it? In fact, did not discover such a whole force! His discovery was: that of the gravity of matter when opposed by a centrifugal force, (!) which is less than the absolute weight of the matter.

Again: if a force of universal gravitation inheres in matter, how did it come to pass—by what oversight did Newton fall headlong in error, and substitute the gravity of the matter of the earth,

which is known to arise as an effect of the earth's rotary motion, for that of universal gravitation? What a substitution! What a mistake!

Once more: if the dogma of the universal gravitation of matter is true, then the matter of the earth must be subject to two forces of gravitation. One arising from the rotary motion of the earth, and exactly equal to its relative weight. The other, the inhering force of gravitation, and exactly equal to the absolute weight of the matter of the earth. But two such forces involve an absurdity; and here, plainly seeing that Newton mistook the former for the latter, we have the means at hand to point out his error.

Mutual Attractions.

My experiments to test the measure of the force of the attraction of the whole earth on certain bodies on its surface, which explode the Newtonian theory of the mutual attractions of all bodies.

First.—A body of iron, weight one hundred pounds, slipped from the hands of a man and fell to the earth. Now, if the attraction of the mass of the whole earth on the mass of iron is as the attraction of the iron on the earth, the attraction of the earth will exceed that of the iron by as many times as one hundred pounds will divide the number of pounds contained in the earth. Newton affirms this to be so, and were the affirmation true, all the men in the world could not lift the iron from the earth's surface. Let us see. The man stoops down and lifts the iron to the place from which it fell, and this lifting demonstrates that the attraction of the whole earth on the iron is less than the

strength of a man. In this experiment we have the disproof of the mutual attraction of the bodies, and the mutual attractions of all bodies are equally baseless.

Second.—An ounce of iron lay on the earth's surface. Schools, colleges, and universities teach that the earth attracts the ounce of iron with a force equal to the weight of the number of ounces contained in the mass of the earth. Wishing to determine the measure of the force of the mass of the earth on that of the iron, and that of the ounce on the earth, I procured a horse-shoe magnet, having an attractive force of one ounce and a grain. When I so placed the magnet that its force could act on the ounce of iron, it flew from the surface of the earth, and, giving in its adhesion to the horse-shoe magnet, was by this medium lifted away from the surface of the earth. This is a clear and sensible demonstration that the force of the gravity of the whole earth on the iron was less than 17 grains.

Third.—If the earth lay on the surface of the sun, a force a little superior to the weight of the earth would suffice to lift the earth and remove it into space, and then at the earth's distance from the sun, their mutual attractions (if assumed to exist) must be altogether overcome by the superior force of the earth's momentum, and hence the perturbations of the heavenly bodies as an effect of universal gravitation is baseless. And because the momentum of the moving bodies of the solar system is a force vastly greater than the weight of the bodies, the latter must be subjected to the former, and therefore not a force competent to control the motions of the heavenly bodies.

But suppose the utmost tension of a string to represent the gravitating force of a 32-pound shot. Then let each one of the many times the mass of the earth may be divided by 32 pounds be represented by a like string. Then let all these strings be twisted into a cable to represent the assumed gravity of the earth to hold the 32-pound shot to its surface.

Now, if the 32-pound shot is held to the surface of the earth by said cable, do you not perceive that a force more than equal to the whole force of the earth's gravity is required to lift it from the earth's surface? But the force of a boy will suffice; and the reason is this: there is no mutual attractions of bodies in proportion to their respective masses.

In Herschel's *Outlines* (442) he makes the utmost tension of a string equal the gravity of the mass of a body; say a string the tension of which will equal the gravity of a 32-pound shot.

D. Olmsted says: A 32-pound ball moving 6,250 feet in a second of time, has a momentum of 200,000 pounds. Therefore the force of gravity will be overcome by the force of momentum in the proportion of 1 to 6,250.

The Earth's Momentum.

HERSCHEL says the mass of the earth is to the mass of the sun as 1 to 354,936, but the momentum of the earth arising from its mass and velocity is greater than the whole of the assumed gravity of the sun's mass, and hence it is too weak a force to counteract the force of the earth's momentum, and it and the projectile force combined compose

a force too great to be balanced by the mere force of the assumed sun's attraction.

The mass of the sun has been assumed to be 500 times greater than the mass of all the other bodies in the solar system, and the astronomers suppose that the sun is dragged about as much by the attractions of the planets and other bodies as it drags them about by its attraction. Suppose 500 men on a rope pulling against one man on the other end of the rope. How absurd to say that the force of the one man sufficed to pull the 500 men one five-hundredth of the way toward him, and just such an absurdity is involved in the Newtonian Law of Universal Gravity and Planetary Perturbations. (See *Principia*, Book III., Proposition XII.)

The absurdity will be not a little amplified by Herschel, who says: An effect of the mutual attractions of the earth and sun is the circulation of the sun around "a point 267 miles from the sun's centre." Now when it turns out that the one force of the weight of the earth will drag the combined force of the weight of the sun (which is 354,936 times greater) around a point 267 miles distant from its centre, then the force of one man will suffice to drag 354,936 equally strong men toward him, and when this of the men and that of the earth and sun shall be esteemed the exact truth with respect to gravity and the strength of the men, then any theory can be welcomed as infallible science.

According to Newton, the tendency of the gravity of the matter of the earth is in lines directed from the surface to the centre of the earth, and not along and across the diameters of the spheroid;

also, that the gravity of the earth's mass is directed outward toward the sun. But how can the earth have a whole force of the gravity of its mass directed inward to its centre, and a whole force of the gravity of its mass directed outward toward the sun ; involving the idea that the matter of the earth possesses an amount of gravitation equal to twice its mass. Unless you accept this as true, you have no use for Newton's Law of Gravitation ; and if you still insist on its truth, please tell if it is not like a wind that has the power to blow on the same line in exactly opposite directions, in the same and in every continuous instant. When the planets Earth and Venus were on opposite sides of the sun, the force of the gravity of the sun was assumed to be directed against the earth, and also at the same time the whole force acted against Venus in an opposite direction, involving the singular agglomeration of the whole force of the sun's gravity flowing inward to its centre, and the whole force flowing outward directed to Earth, and the whole force flowing outward in an opposite course directed to Venus, making three forces, or three times as much gravity as could arise from the sun's mass.

Newton, in his theory of gravitation and parallelogram of forces, to account for the orbital motions of the celestial spheres, adjusted the centrifugal force of each one of the heavenly globes to an equality with the force of the gravity of the sun's entire mass ; requiring as many distinct centrifugal or projectile forces as there are bodies in the solar system. Each one of the forces to equal the whole attraction of the sun on each body, its density and the square of the distance always considered. What

a multitude of forces! How can the sun furnish them?

Again : Newton assumed that the expanse on all sides of the sun was filled or pervaded by the force of the sun's gravity to an extent equal to the spherical space occupied by the light of the sun. Let us admit this, and then our conclusion will partake of the nature of an axiom ; for the sphere of the sun's light is to the bulk of the earth, as the sphere of the sun's gravity is to the mass of the earth. Hence the earth can not be acted on by a greater proportion of the gravity of the sun, than the part it holds to the whole extent of the field of the assumed sun's gravity, all other bodies must be subject to the same true reasoning, and therefore because any one of the heavenly bodies bears so small a proportion to the expanse filled with the sun's light, and the mass of any one of the bodies bears a less proportion to the expanse assumed to be filled with the sun's gravity, it is the perfection of human reason to conclude that some other force than that of the sun's gravity originated the orbital motions of the heavenly bodies.

Motions.

I HAVE communicated to a top whirling and forward motions, and saw the top advance orbitally in the curve line of a spiral, and when the top reached the centre of the spiral its orbital advance was arrested, but the whirling of the top on its point or around its axis, being retarded only by the resistance of the air, continued until exhausted by atmospherical resistance. From this we may be able to perceive how like motions were impressed on the sun. (See pages 77 and 78.)

The Sun's Motions.

1. THE motions of the sun having been generated by a sidewise impulse, he moved forward in the direction of a curve line of a spiral, and orbitally advanced to the centre of the spiral, at which point he finished his orbital career.

2. The same force which caused the forward motion, precipitated the matter of the sun around his axis with a velocity tending to equilibrium, and there being no interference with the rotary motion, it is perpetual.

3. The matter of the sun, being in a state of equilibrium, will press neither way, being nicely balanced by the centrifugal force arising from the sun's axial rotation, and such a globe I fully believe the sun to be, the particles of its matter without attraction for each other, its mass without weight, and without any conceivable kind of gravity, and its centre, the true centre of the world.

These reasonings carry conviction to the intelligent mind ; and the dogma, that the orbital motions of the planets are due to the mutual gravitations of the masses of the sun and planets, is seen to be as chimerical as is any known error of the ancients. The wise among men will be constrained to seek some other way not liable to so many destructive objections. Which way of nature I have discovered, and invite you to enter this glorious path, and see and learn the long sought for cause of the motions of the heavenly spheres. Farewell, thou Law of Universal Gravitation. Retire from the unbounded field of space and worlds of light over which thou hast reigned like a god, lulling to rest the in-

quity : Why move the heavenly orbs in curve line paths? Thy destiny is finished, and now I pray thee do homage to the truth, and let the disclosed knowledge of A RIGHT LINE IMPULSE to urge a globe in a curve line be thy mandamus to unloose the swaddling bands by which thou hast bound the works of God. Take off thy all-grasping hand of gravitation and let the heavenly spheres assert their liberty to move unaided by thee.

Solar Parallaxes.

NEWCOMB'S SOLAR PARALLAX.

IN 1867, Simon Newcomb, Professor of Mathematics, United States Navy, published, "*Investigations of the Distance of the Sun, and of the Elements which depend upon it.*" From the observations of Mars, made during the opposition of 1862, and from other sources, forming Appendix II., to the Washington Astronomical Observatory for 1865."

On page 29, Simon Newcomb says : "The mean equatorial horizontal parallax of the sun is $8''.848$ with a probable error of $0''.013$, corresponding to a mean distance of 92,380,000 statute miles. For astronomical purposes, the value of $8''.85$ may be taken as a round number of hundredths having equal weight with the above concluded value."

My Solar Parallax— $8''.8485$.

IN my analysis of Newcomb's parallax of the sun, I proved that the angle which the equatorial radius of the earth subtends, seen from the sun's centre, is $8''.8485$, and corresponds to a mean distance of 92,380,416 miles.

In my studies to bring the solution of any equatorial horizontal parallax within the pale of common arithmetic, I obtained the following results :

1. The arc of the equatorial horizontal parallax of the sun, or of any one of the planets, is the arc of a circle, the semi-diameter of which is the mean distance of the sun or planet from the earth's centre.

2. The arc which subtends and is the measure of the parallactic angle of the sun, or that of any one of the planets, in linear measure is the same as the linear measure of the earth's equatorial radius.

3. To prove an equatorial horizontal parallax, compare the linear measure of the arc of the parallactic angle, with the linear measure of the earth's equatorial radius, and if they coincide, the parallax is reliable.

4. The substitution of the linear measure of the earth's equatorial radius, for the linear measure of the arc of the parallactic angle of the sun is justified on the ground that there is no appreciable difference between the sine and tangent of the angle of the solar parallax, and consequently there can be no difference between the arc and tangent ; and the same is true of the parallactic angles of all the planets. But should some pedantic or inexperienced scholar think there is a difference, notwithstanding the smallness of the parallactic angles of the sun and planets, a trial of the case in actual work will convince the most skeptical of the truth of my statement.

Example to find the sun's mean distance by single proportion in common arithmetic :

As the arc or angle of the sun's parallax.....8".8485
 Is to the circle in degrees.....360°
 So is the base line of the parallax.....3,963 miles
 To the linear measure of the circle, 580,442,786.91301
 miles $\div 3.14159 = 184,760,833$ miles in the diameter of the
 circle $\div 2 = 92,380,416$ miles in the radius of the circle, and
 this is the term of the sun's mean distance. (See pages 91
 and 92.)

This change in the solar parallax involves a change in the real diameter of the sun, and I have the honor of being the discoverer of how to find the term of the sun's real diameter in the fourth term of a single proportion in common arithmetic. (See pages 88 and 89.)

Example to find the real diameter of the sun in the fourth term of a single proportion in common arithmetic. (See the "rule" on page 89.)

As the arc or angle of the sun's parallax.....8".8485
 Is to the sun's apparent diameter.....32'.4"
 So is the base line of the parallax.....3,963 miles
 To the real diameter of the sun.....861,707 miles

N. B.—The term of the sun's apparent diameter I selected from the American Nautical Almanac for 1864.

Also, Newcomb's parallax of the sun changes the value of the sun's mass, taking the mass of the earth as unity to equal 326,800 earths, but Herschel's mass of the sun, taking the mass of the earth as unity, is equal to 354,936 earths; resulting in the decrease of the weight of the sun by an amount nearly equal to 30,000 times the weight or gravity of the earth. By so much, at least, it is made to appear that the sun has not as much gravitating force by Newcomb's parallax as Herschel thought it had.

ENCKE'S SOLAR PARALLAX.

The American and English Nautical Almanacs

for 1864, accepted as an approximation to the truth Encke's discussions of the transits of Venus in 1761 and 1769, as furnishing the standard equatorial horizontal parallax of the sun at the earth's mean distance= $8''.5776$. This parallax is equal in linear measure to 3,841.671 miles.

HERSCHEL'S SOLAR PARALLAX.

Herschel, for just reasons, having objections against the assumed integrity of Encke's solar parallax, makes the equatorial horizontal parallax of the sun to equal $8''.6$, which in linear measure is equal to 3,852 miles nearly.

NEWCOMB'S SOLAR PARALLAX.

Newcomb, departing from all former standards and statements of the value of the solar parallax, in his investigations of "the sun's distance," came nearer to the goal of truth than any of his eminent predecessors, and makes the equatorial horizontal parallax of the sun to be $8''.85$, which in line measure is equal to 3,963.657271 miles.

THE AUTHOR'S SOLAR PARALLAX.

My solar parallax of $8''.8485$, which is my correction of Newcomb's solar parallax, is in line measure equal to 3,963 miles, and coincides with the linear measure of the earth's equatorial radius.

The base line of every equatorial horizontal parallax, being the line of the earth's equatorial radius= $3,963$ miles, the arc or angle of the parallax in degree should exactly equal a line measure of 3,963 miles, and in any case when the line measure of the arc or angle of the parallax is more or less than 3,963 miles, the plus or minus is the measure of the error involved.

TABLE OF SOLAR PARALLAXES IN ONE VIEW.

Encke's.....	8".5776	is equal to 3,841.671 miles.
Herschel's.....	8".6	is equal to 3,852 miles.
Newcomb's.....	8".85	is equal to 3,963.657271 miles.
The Author's.....	8".8485	is equal to 3,963 miles.

From the above it follows, that the line measure of the arc or angle of Encke's solar parallax is minus 121.329 miles, and that of Herschel's is minus 111 miles nearly, and the solar parallax of Newcomb's is plus .657271 fraction of a mile; requiring these corrections that each one of the parallaxes may equal 3,963 miles, with additions of corresponding degrees of angular measurements.

And if any mathematician or astronomer should be led, on further examination and discovery, to conclude that the line measure of the earth's equatorial radius should be taken to be less in measure than the term of 3,963 miles, which I have used in my work, the parallax should be correspondingly corrected, because mathematical law requires that the linear measure of the arc and tangent of any equatorial horizontal parallax should always coincide with the linear measure of the earth's equatorial radius, which is made the tangent of the angle.

In my determinations of the diameter and distance of the sun as they may be seen hereafter, I used the solar parallax of 8".6, which I found in Herschel's *Outlines*, and in books of other learned authors, as being most consonant with the truth, which parallax I found, on subsequent examination, to be in error, by an amount in line measure of 111 miles nearly, and in angular measurement 0".2485 of a degree.

My apology for not using my corrected equatorial horizontal parallax of the sun to the exclu-

sion of that of 8".6, by Herschel, is that Newcomb's work did not come into my possession until after all the subsequent part of my work was stereotyped.

KAISERLICHE AKADEMIE DER WISSENSCHAFTEN IN WEIN.

WEIN, den 26, *Marz*, 1868.

The Imperial Academy of Sciences, at Vienna, in the Empire of Austria (in a letter bearing the above caption and date), have tendered to me their thanks, and commanded their Secretary to convey to me their distinguished appreciation of my discoveries, and that they had deposited my works in their library. Then doing homage to genius, their letter concluded thus: "To the honored Sir WM. ISAACS LOOMIS, Pastor of the Piermont Baptist Church."

ASTRONOMICAL EPOCH OF MOSES,

Versus

Newton's System of the World and the American Bible Union.

A revised edition of the *Book of Genesis*, by Thomas J. Conant, on p. 4, speaks of a charge "against the sacred narrative, that it conflicts with the known truths of astronomy." According to Laplace and the tendency of the teaching of the Newtonian astronomers, the sun was caused to be before the earth, but Moses states the earth was caused to be on the first day, and the sun on the fourth day of the creation. What a difference! Because the structure of the planetary system of

Newton differs from that of Moses, all men should have, out of reverence for God the Creator, demanded a verdict against Newton; but our poor erring eyesight, dazzled by the torchlight of the new science, clothed Newton with the honors of infallibility, and it was concluded that poor Moses, like an old fossil, should be laid on the shelf, to awaken our sympathy for the dark and ignorant age in which he lived.

A true interpretation of the facts of Natural Astronomy demonstrates that the motions of the earth are independent of any relation to the sun, and consequently the earth could have revolved in its orbit for seventy-two hours, or between three and four geologic ages, such as were guessed at by Agassiz and Hugh Miller, before the sun was caused to be.

Permit me now to say to the infidel Ha! ha!-ists who have concluded that they know more by the teachings of Newton than Moses ever learned of God: To the front, gentlemen, and learn that the narrative of Moses, in respect to the construction of the solar system, is in the most perfect accordance with Natural Astronomy.

WHAT MATHEMATICIANS HAVE PRONOUNCED MATHE-
MATICALLY IMPOSSIBLE, I HAVE DEMONSTRATED
TO BE MATHEMATICALLY CERTAIN.

The science of Trigonometry teaches: In a triangle there are three sides and three angles, and that to limit the triangle to a particular form and size, three of the parts must be known, from which to determine the remaining three parts.

T. Dick, LL. D., affirms: "On the demonstrated

properties of a triangle depends the mode of measuring the distance of the sun and moon, the magnitudes of the planets, and the dimension of the solar system."

Here I join issue and affirm: That with two measures of the arc of the vertical angle of any one of the right-angled triangles projected in the equatorial horizontal parallaxes of the sun and planets, I can determine the linear measure of its perpendicular leg. Then the square root of the sum of the squares of the base and perpendicular leg will be the measure of the hypotenuse of the right-angled triangle, and the three sides will be determined. I hesitated not a little when I contemplated the disadvantages of my situation. On one side is congregated a galaxy of intelligences, formed of the mentally renowned of ages, composed of Atheists, Deists, Pagans, Roman Catholics, and Protestants, in one harmonious voice protesting against the success of my seemingly hopeless effort. On the other side, alone, and unsupported by the prestige of fame or ardent friends, a Baptist minister, coveting in this case to be crowned the mental king, engages to give a new lesson in science, that the living world of men will never forget.

First.—A star seen from the ends of the diameter of the earth's orbit exhibited an annual parallax of 1" of a degree.

Second.—The triangle projected in the parallax is an isosceles triangle, and the line of bisection from the sun's centre to the star is the distance of the star from the sun's centre, the linear measure of which I will find.

Third.—The linear measure of the diameter of the earth's orbit, which arises from my corrected

solar parallax, as before seen, is 184,760,833 miles.

Fourth.—The angle of the parallax being only one second of a degree, there can be no appreciable difference between the arc and tangent of the angle, and therefore the linear measure of the angle and arc of the parallax coincide.

The two measures of the arc of this parallax :

First.—The circular measure of the arc of 1" of a degree carried to seven places of decimals is 0".0000048, and is the divisor.

Second.—The linear measure of the arc is the same as that of the diameter of the earth's orbit, and is 184,760,833 miles, and is the dividend.

DEMONSTRATION BY DIVISION.

$184,760,833,0000000 \div 48 = 38,490,840,000,000$ miles, is the quotient, which is the distance of the star from the conditions of the example.

You have now the proof before you that the sublime problem of finding the distance of a star can be determined without any knowledge of trigonometry. Furthermore: in all equatorial horizontal parallaxes of the sun and planets, the arc of the parallax (which is the measure of the angle) IS AN ARC OF A CIRCLE, the *radius* of which is the required *mean distance* (see page 91), and all these examples can be solved, in fact are resolved in my work by common arithmetic, and hence you have the positive testimony, the most certain demonstration, that the bisecting line of an isosceles triangle, and the perpendicular leg of any right-angled triangle coming within the measures of angles of all the equatorial horizontal parallaxes can be determined without the use of trigonometry.

I have done what T. Dick declared to be impossible, and in my solutions of the diameters of the sun and planets by a simple proportion in common arithmetic, have invented a way in knowledge unknown to all the mathematicians who were before me; and now I may be permitted to say: That though all the trigonometers are unanimous with Dick, the fact is brought to light that what they pronounced impossible I have demonstrated to be mathematically certain.

An Intellectual Excursion.

MEASURES OF THE CIRCLE.

1. MEASURE IN DEGREES.—The intelligent of mankind have concluded that 360° shall constitute the measure of the circle in degrees.

2. CIRCULAR MEASURE.—A circle whose radius is unity, the measure of its circumference, retaining seven places of decimals, is 6.2831853.

3. The circular measure of one second of a degree is 0.0000048, and any other measure between these can be found by proportion.

4. ARTIFICIAL MEASURE.—By dividing the circular measure of an arc of an angle, by the natural tangent of the angle, a quotient is obtained, which I have constituted the artificial measure of the arc.

How to find the perpendicular leg of a right-angled triangle when the angle of parallax is so large that the linear measure of its arc and tangent disagree. (See page 97.) In former cases, the linear measure of the arc was given, but when the linear measure of the arc of the angle is unknown, substitute for it the artificial measure of the arc of the angle, which may be found by dividing the cir-

cular measure of the arc of the angle, by the natural tangent of the arc of the angle, and the quotient will be the required term. Then by Proportion:—As the circular measure of the arc of the angle at the vertex : is to the artificial measure of the arc : : so is the base line of the right-angled triangle : to the linear measure of the required side.

THE HEIGHT OF A TOWER.

What is the height of a tower, if a line of 100 feet drawn from the bottom on a horizontal plane, subtends an angle of $42^{\circ}30'$? The circular measure of $42^{\circ}30' = 7417649$ for the first term of a proportion, the artificial measure of $42^{\circ}30' = 80.94953$ for the second term, and base line of the triangle 100 feet for the third term, and the fourth term will be the required height.

Demonstration.—As $7417649 : 80.94953 :: 100$ feet : 109.13 feet, which is the height of the tower.

A like problem to find the height of a tower by Logarithms, may be seen in T. Dick's works, *Celestial Scenery*, page 143, which I will lay before the reader.

DICK'S PROBLEM.

Logarithm of the 2d term—Tangent of $47\frac{1}{2}^{\circ} = 10.0379475$
 Logarithm of A B = 100 feet—3d term..... 2.0000000

12.0379475

Logarithm of radius—1st term..... 10.0000000
 Logarithm of CB, 4th term..... = $109\frac{1}{8} = 2.0379475$

The answer 109.13 feet, by my method, is more exact than $109\frac{1}{8}$ feet given by Dick. This exactness of result is the merit and glory of my discovery, the firm base on which it rests.

PROBLEM.—An observer at the mast-head of a

ship 66 feet high, looking at another ship, determines the angle of depression to be 10° . What is the distance of the two ships from each other?

Demonstration.—As the circular measure of 10° , which is 1745329 : is to the artificial measure of 10° , which is 98.98080 : : so is the height of the mast 66 feet : to 374.292 feet = 22.68+rods.

Again my answer, 22.68+rods, is more exact than that given by Day and Thomson in a like problem, which is $22.66\frac{2}{3}$ rods.

If the height of an object is known, its distance may be known, by the circular and artificial measures of the arc of the angle of elevation, and the linear measure of its height.

PROBLEM.—A man on the bank of a river, from observations of a ship's mast, which is known to be 99 feet high, finds its angle of elevation to be $3^\circ 30'$. What is the distance of the ship from the observer?

Demonstration.—As the circular measure of arc of $3\frac{1}{2}^\circ$, which is 0610865 : is to the artificial measure of arc of $3\frac{1}{2}^\circ$, which is 99.88636 : : so is 99 feet, the height of the ship's mast : to 1618.81 feet = 98.1+rods, the required distance. Day and Thomson's Trigonometry, page 133, makes the answer 98 rods.

Practical Navigation. By N. Bowditch. Third Edition. Page 174.

BOWDITCH'S PROBLEM—VII.

Being 96 fathoms from the bottom of a tower, I found its altitude above the horizontal line drawn from my eye was $15^\circ 10'$; required the elevation above that line?

Demonstration.—As the circular measure of arc

of $74^{\circ}50'$, which is 1.3060880 : is to the artificial measure of arc of $74^{\circ}50'$, which is 35.40407 : : so is 96 fathoms : to 26.023 fathoms. The answer 26.023 fathoms, by my method, is more exact, by 1.63 inch, than the answer 26 fathoms given by Bowditch.

Required the height of Bunker Hill Monument, if a line of 80.44 feet, measured from the bottom on a horizontal plane, subtends an angle of 20° .

First.—Find the circular measure of the arc of the given angle, which is obtained by the proportion:—As $360^{\circ} : 20^{\circ} :: 6.2831853 : 3490658$ the circular measure.

Second.—From a table of natural tangents select the natural tangent of the given angle, which is 36379, and with it divide the circular measure of the arc of the given angle, and the quotient will be the artificial measure of the arc of the given angle ; thus, $3490658 \div 36379 = 95.90510$ which is the artificial measure of an arc of 20° . Then by proportion:—As 3490658 : 95.90510 : : 80.44 feet : 221.00 feet, the required height of the Monument.

The construction and use of tables of circular and artificial measures of arc of $1''$ and upward, and a knowledge of a table of natural tangents, will unfold the science of right-angled triangles, in a clearer light than ever known before.

The teachers of our common schools, after a few hours' study, are prepared to adopt understandingly, my system of science, for finding the sides of right-angled triangles, and all heights and distances.

Q

173

L88

1869

UC SOUTHERN REGIONAL LIBRARY FACILITY



A 000 745 956 3

